Rocky Flats Citizens Advisory Board
Meeting Minutes, March 7, 1996

Part II

Question: I'd like you to address the concern about particle size, and its implication that your monitoring to date may be inaccurate, and talk about if there are any plans or any way to improve on the monitoring accuracy.

Answer: The scientific panel on monitoring systems in 1989-1990 made several recommendations for things that the Health Department and Rocky Flats should add to their monitoring programs. We added a number of those. Among the things we added were PM10 sampling and precipitation sampling. At a number of meetings we talked about how efficient is an ordinary TSP sampler at sampling the larger size particles and the smaller size particles. A TSP sampler gathers the dust in the air into a single sample, then you analyze it. The theory behind using the particle sizing head is that the smaller the particle, the more deeply it's inhaled. The more deeply it's inhaled, the higher the radiation dose you would get from plutonium particles. The higher the radiation dose, obviously the greater the hazard and risk. With the particle sizing head, we were able to try and get a handle on how small the particles are that are breathed and what are the implications for public health. As we think about particles that are greater than 10 microns in diameter, we are talking about particles that are rather large and rather heavy. They may not remain in the air for long, or exist in the air. The smaller particles that are really too small to be trapped by this sampling device, we don't have enough insight to know whether it's a valid concern. We do know that particles attach themselves to larger particles, but we don't know how quickly that happens and how far downwind from the site or from the emission point that happens. That is an unanswered question. We will start graphing the results and looking at the distribution to see if that gives us additional insight. I would add that when we're talking about large particles that are pollens which are designed to float in the air, those particles behave very much like small particles, in terms of aerodynamic behavior. Small particles are efficiently captured by the samplers, and are captured in the size range that would be typically inhalable. For those with allergies, pollens are quite a concern in terms of inhalation. We're looking at the same phenomena in the samplers. These particles are designed to float, and by floating they are easily sampled by the samplers. The pollens, even though their diameter may be very large, behave as a much smaller particle. It would capture typically those pollens.

Question: You're talking about a more robust monitoring system as different activities take place at Rocky Flats. I'm still not clear where the plans for that more robust system of monitoring are, and what sort of commitment you are making to implement a more robust plan.

Answer: When you refer to systems, remember we're talking about is a discrete remediation activity, anything from digging a hole in the ground to working on a building. Those systems are not necessarily going to look like the ambient monitoring systems we're talking about here, with multiple stations all over the site. In some cases they could, but that's not necessarily what we're talking about. The commitment to monitoring is regulatory because when they do that kind of work, they have to demonstrate they won't cause an impact from

the work. Monitoring is a requirement.

Question: Required where? Where does that requirement come from?

Answer: The most significant driver is worker health, OSHA, not environmental. We're going to have environmental monitors, but we're going to have so much more to protect the workers. That's going to drive the monitoring more than anything. Because of OSHA, we have to worry about the workers, not a population that's downwind with a lot of dilution and dispersion. We have to protect the immediate area to comply with worker standards.

Question: Are there plans that are now drawn up for this extra monitoring?

Answer: They're vague, at the beginning of development. We don't yet know what the projects are going to be, what will be funded, and what the timing is going to be. The projects will have to be looked at together, so we can see cumulative impacts. The remediation programs that have been ongoing, small cleanup activities, each had monitoring components to the specific activity.

Comment: It is OSHA driven, and that's the wrong priority. When you talk about cleaning up soils out in the air, the major reason they don't want to cover the area to keep emissions from getting into the air is that they are afraid of OSHA. They're not afraid of public safety, because you can't prove what the public is being exposed to. That gives them an out. OSHA scares them more than public health.

Question: For what reason is the groundwater sampling being discontinued?

Answer: There are two reasons. First, it's a duplication of sampling that the plant is doing, and with our budget restrictions, that's an easy place to eliminate sampling and analysis costs. Second, over the last year and a half, we've been trying to get closure on analysis of minor amounts of plutonium found in the boundary groundwater wells. There is a report which analyzed that issue, and we did have low but detectable levels of plutonium in boundary groundwaters. Our analysis showed that the plutonium was not moving with groundwater. When plutonium was moving in the water regime, it was probably in sediment or colloidal form and actually was coming into the well from the surface water, or the alluvial water adjacent from the storm event. Our conclusion was that we didn't need two sets of people monitoring it; we were comfortable with the plant's continued monitoring rather than us doing duplicating it.

Question: What about the other contaminants besides plutonium? There are significant other contaminants in the groundwater, and plutonium may be pretty limited compared to them - what's going to happen to those?

Answer: There's a significant amount of groundwater monitoring occurring at the site. One of our more successful collaboration relationships with Rocky Flats over the last two years has been in groundwater.

Question: I'm concerned the enforceability of what you're doing. You said there are various agreements with the state and the regulators.

Answer: The specific requirement comes from either RCRA or CERCLA. RCRA is the

hazardous waste regulations, CERCLA is Superfund.

Question: If the drivers are OSHA, is it true that worker standards are less protective than public health standards?

Answer: That's true, but I didn't say it was OSHA - I said it was CERCLA and RCRA. There is also an OSHA driver for worker monitoring; you have to protect the workers. There are two things that you're looking at, one is protecting public health, environment off-site, etc., and the other is workers. There are two drivers. The answer is you have to satisfy both. But what you find when you protect the worker, nine times out of ten you've covered all the environmental issues because it's so restrictive.

Question: In all the materials we've seen tonight in the way of mapping, are there observations and monitoring going on at a distance from Rocky Flats site - what is the logic that says we should not also be monitoring at a distance in population centers?

Answer: The Health Advisory Panel has been conducting an evaluation of historic releases from Rocky Flats to determine what the impact historically has been off-site. It's my understanding they're not seeing significant off-site impacts from major releases. The logic of sampling closer to the source rather than further from the source is that you have the ability to get more coverage of a pathway. The further out you get, in order to provide similar coverage, you would need many more samplers and it would get expensive.

Comment: When I was on the Citizens Sampling Committee, I pushed for getting some samples out away from the plant and into the South Platte River valley, because that's where I thought the air currents would be taking a lot of this plutonium. As I recall, the committee results showed the plutonium levels dropped off but then stayed level all the way out into the South Platte River valley. I think there is an impetus for far-out sampling to be done.

Question: I've been doing some research on cancer in Colorado, and it seems that the male population aged 50-75 since 1988 to 1995, prostate cancer in the Jefferson County area is outpacing the rest of the nation by 600%. For all other cancers in the Jefferson County area, it has risen over 300% over the rest of the nation. Your monitoring Flats leaves me with great concern that Rocky Flats is the cause of cancer in Jefferson County area. It says to me your monitoring is not getting the job done. I know 10 men in the Arvada area who have prostate cancer just in the last three years; I'm one of them. They caught my prostate cancer in time. You're going to have to find a better way of monitoring all the plutonium particulates and other highly radioactive waste that's coming off the site. With stiff winds blowing downstream from Rocky Flats of 100 miles per hour, it's going to carry down to the entire metro area.

Comment: Colorado is number one in the nation for prostate cancer.

Answer: We have a group that's looking at health effects associated with Rocky Flats. We are performing two studies that should help define whether or not Rocky Flats has an impact on the surrounding community from a cancer or birth defect standpoint. We're setting up with DOE funding a cancer registry where cancer occurrence and deaths are tracked on a small scale across the state so we can see if there are areas of concentration around places like Rocky Flats. That project has been underway three or four years, so we don't have much in the way of results yet. The second is a birth defects registry that is

similar, it looks at birth defects across the state to try to see if there are clusters associated with facilities like Rocky Flats.

Question: With the reduction in funding, and the reduction or elimination of certain monitoring apparatus and consequential monitoring being picked up by Broomfield and the state, external from Rocky Flats, who picked up the tab? Does Broomfield pay for its own monitoring? Does the state pay for this, or is there a cooperative effort of federal funding?

Answer: Our funding for this program is provided by DOE through a five-year agreement originally initiated between the governor and the Secretary of Energy to mitigate impacts on Denver from Rocky Flats. I believe the cities do their own monitoring and pay for that themselves.

Question: Once the historical data is collected, how will that be used and how will it benefit the community?

Answer: Talking about the cancer and birth defects registry data - it's all after the fact, but if we can start seeing trends associated with vicinities, that's what we can do. It's very hard to take for example county-wide data and apply it to a facility like Rocky Flats. Also, Jefferson County is one of the fastest-growing counties in Colorado, a lot of people coming here from out-of-state. In the registries, they try to sort through that kind of information to look at occurrences. But it will help us in the future to know where to look.

Question: The environmental monitoring you're doing now, is it affecting the plant's mitigation plans?

Answer: Some of the data we're collecting on particle size and occurrence should be able to be tied back into remediation activities by looking closer at mitigating particulate dust, getting it out of excavations, etc. Another point is that the actions levels working group associated with the Rocky Flats Compliance Agreement is coming up with cleanup standards and we're going to have to monitor to those requirements. Our programs are going to have to reflect those new standards.

Question: Since CDPHE is going to do all the monitoring on the ponds, don't you think it would be good for your quality assurance to split those samples?

Answer: We could do that. I think that's a good idea. Usually when we get a sample, we have enough to run several analyses, we usually have enough to do another analysis if we need to. But we do not have another sample. We used to have splits; they were very helpful because there have been occasions where our results were higher or DOE's results were higher, and we looked at both the results.

Question: You indicated that there was going to be a system of monitoring drawn up for the future. If that's the case, I would appreciate it if you would get back to the Board with that information. I do think good monitoring outweighs cost issues. There have been serious questions raised about whether or not the monitoring now gives us the assurance that we need. You're planning on changing the monitoring system in the summer - I'm wondering how much money you think you're going to save over what period of time and where that money's going to go.

Answer: I don't know how much I'll be able to save. We've already reduced the programs, from '95 to '96. I don't know the outcome of our DQO process. I don't think there will be that much more reduction. We're down to bare bones. I have no idea if I'm going to save anything. I have no idea where we're going to end up. Right now, we're just talking about '95 to '96, and we are having this process to evaluate where we are. If we reduce too much, if we can reduce some more, if we can integrate some more, we don't know. That's what the whole process is about.

Question: You've reduced your monitoring to a certain level. Do you know how much money you have saved thus far, and where does that money go?

Answer: Ballpark - five to ten million. It goes to risk reduction, to special nuclear material stabilization, I believe.

Comment: Can you get back to us with more exact figures on what the savings from the change to the monitoring has been for the plant, and where it's gone?

Question: The problems with the cancer registries are missed cases, and with cancer's latency of 25-40 years, there are problems of missed cases. The cancer and birth defect registries are a good start. We don't have real good health status indicators for community health status regarding low-level radiation exposure, it's not available. Can the off-site exposure monitoring be coded in a way to be used by those who are developing more useful health status indicators?

Answer: There are lots of elegant models that exist. All our radiation protection guidelines are really based on 40 years of radiation biology research in which we try to relate risk to dose. We can compute dose reasonably well, and we have some idea of what the risk will be from a given dose, particularly if the dose is high. There is still, unfortunately, a lot of debate about the affects of low doses. To my knowledge, there have been no real scientifically proven effects of radiation at doses below about 10 rem to humans. You can extrapolate, but most people feel the linear extrapolation is likely to be conservative. The best you can do is to look at large populations of people and try to do associations. It's a real difficult problem.

Question: You have been dancing around the topic of sub-microscopic plutonium particles - I want to know what are the potential dangers to the public for exposure to this kind of particle?

Answer: From what I've been able to gather, this first form of plutonium is a soluble plutonium. It doesn't make any difference whether it's on pollen, etc. If it gets into you and sits there for very long, it can be absorbed and you can be getting a dose from it. We've got to talk about plutonium in both its soluble and particulate form. There are some data that bear a little bit on this, maybe not directly as to the question or whether these little particles are out there. One of the most interesting things we have done over the last couple of years is to actually measure plutonium in the urine of living people. Using fission track analysis, we've looked at about 15 people that live immediately downwind of Rocky Flats that have lived there a long time, and we had a control group of people from the Fort Collins area. What we found is that with ordinary radiochemical techniques, the levels of plutonium in urine are so small that they're below our detection limits. We found that we really could see no difference in the plutonium levels between people who live in the Fort Collins area and

people who live right next to Rocky Flats. Now if there were high doses, and there were a lot of the small soluble plutonium getting into people, you'd think that you might be able to see it in urine. This we have not seen. And we've also not seen much in the way of plutonium in the autopsy tissues of people. Also, we've taken samples from Rocky Flats out to 20 miles or so, and we see a decline and then it levels out where we run into the global fallout plutonium that's all over the northern hemisphere. Plutonium tends to attach to soil extremely strongly. If you try to leach plutonium from Rocky Flats soils, it takes extremely strong acids to get it out, you can't do it with water, and if any of it were soluble, you'd think it would go into the water phase. There is still some resuspension going on at Rocky Flats, we can see it in plants. I think the resuspension is declining, and it's because the plutonium is slowly moving into the soil.

DISCUSSION ON PRIORITIZATION OF ISSUES FOR THE 1996 WORK PLAN (Eugene DeMayo): Those Board members who have not submitted their prioritization list were asked to get those to the staff as soon as possible. Ken Korkia prepared and discussed a draft work plan based on those issues. CAB committee co-chairs will meet to discuss and revise the work plan (meeting scheduled for 5 - 6:30 p.m. on Thursday, March 14, at the CAB office).

OTHER ISSUES:

Clarifying Board terms. Terms were selected at the retreat, and those Board members not in attendance at the retreat had terms selected randomly. There is no limitation in the number of terms that a Board member can serve. Members must seek reappointment at the end of their respective terms. Anyone who is interested in being on the Board is encouraged to submit an application.

Officer nominations for April elections. CAB members were encouraged to nominate someone for, or seek an office. Elections will be held at the April meeting. The chair, vice-chair and secretary have held their respective office the two-year maximum as specified in the bylaws. Eugene asked Board members to submit nominations to the office (a form was provided to Board members, which should be returned to the CAB office).

E-mail needs assessment. Board members were asked to return a survey to Erin so that she can look at the results and determine what may be needed to use this communication capability.

Meeting room change and related issues. CAB members discussed the possibility of moving monthly Board meetings to the Arvada Center. Arvada would be able to provide an in-house microphone system for use during the meetings. Although some Board members were interested in moving to the Arvada Center, most were comfortable with the arrangement at Westminster City Hall and did not wish to move at this time. This item was tabled. In addition, one Board member discussed the issue of having Board members eat meals during meetings without providing anything to public attending the meetings. Some suggestions were made for changing the room configuration, and it was also suggested that Board members meet at 6 p.m. for dinner, then have the public portion of the meeting begin at 6:30.

Board member resignation. Mike Freeman noted that he will be relocating to Chicago within the next two months or so, and would have to resign the Board at that time.

PUBLIC COMMENT PERIOD:

Comment: Joe Rippetoe: I would like to request that the Board invite Manufacturing Sciences Corporation to come in and give an update or presentation addressing the status of the NCPP project.

Response: Steve Tarlton: As a member of the Steering Committee for NCPP. There will be a public meeting in April to discuss economic conversion activities at Rocky Flats, including NCPP and some of the others that are underway. The reason there hasn't been one before now is that the NCPP funding was uncertain until January. Tom Marshall: The Site Wide Issues Committee has NCPP on its lists of items to follow and review. Something will come forth, but the committee hasn't begun to look at it.

NEXT MEETING:

Date: April 11, 1996, 6 - 9:30 p.m.

Location: Arvada Center for the Arts and Humanities, 6901 Wadsworth Boulevard, Arvada

Agenda: 1998 DOE budget submittal; RFCA summary; recommendation on hazardous waste identification rules

ACTION ITEM SUMMARY: ASSIGNED TO:

1) Submit prioritized issues list to staff for work plan development - Board members

2) Complete and return survey on e-mail to Erin - Board members

MEETING ADJOURNED AT 9:40 P.M. (* Taped transcript of full meeting is available in CAB office.)

MINUTES APPROVED BY:

KATHRYN M. JOHNSON

Secretary, Rocky Flats Citizens Advisory Board

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